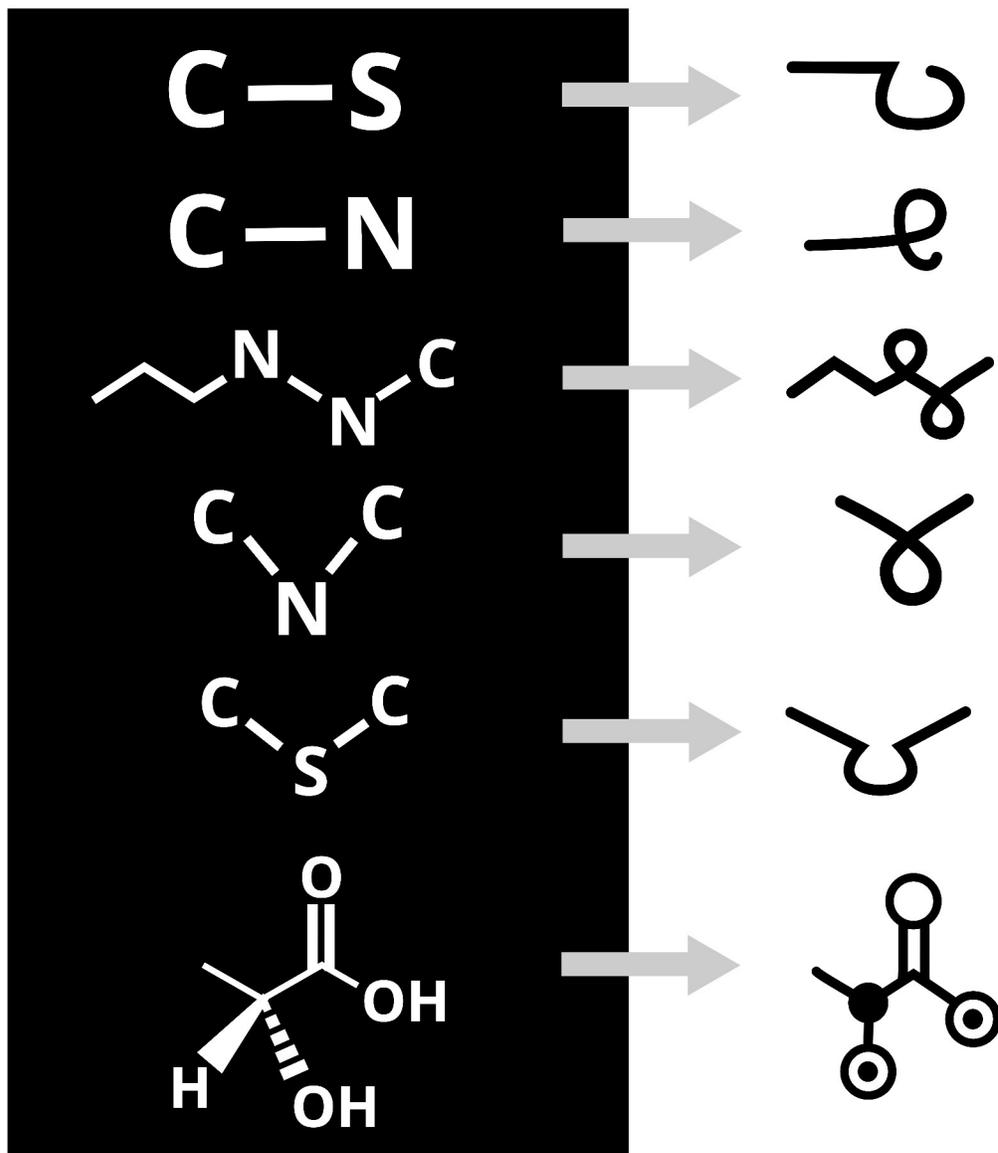
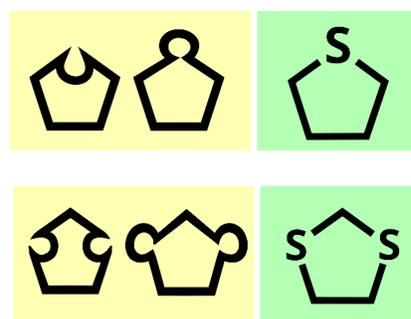
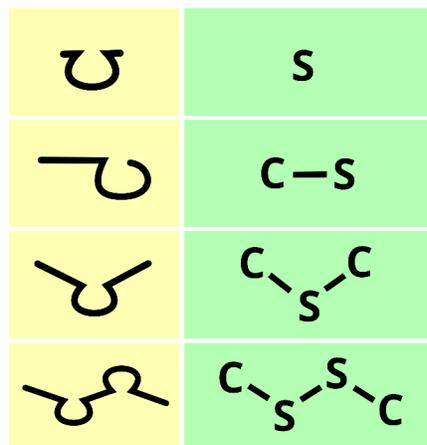
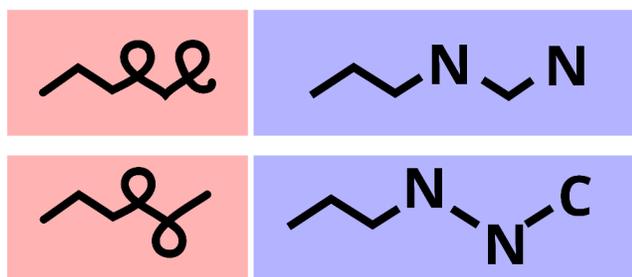
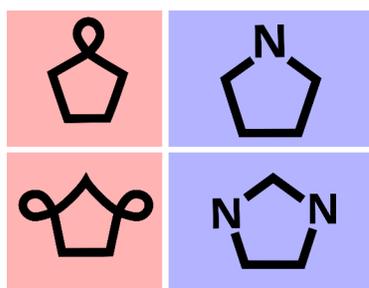
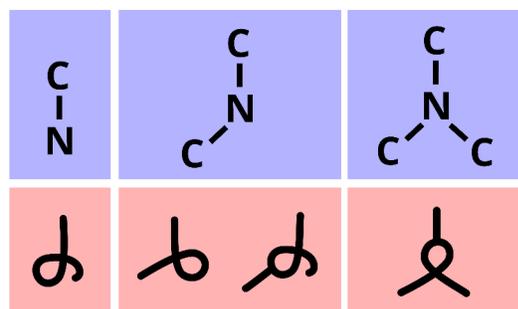
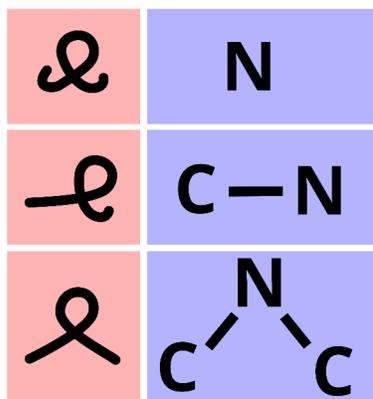


# Chemistry Cosmetic Pack

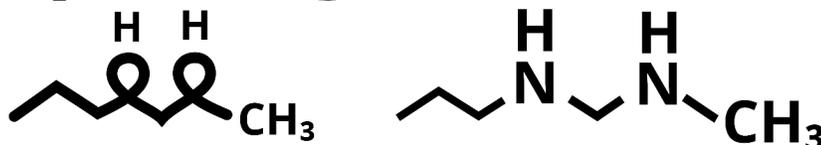


Crash Course

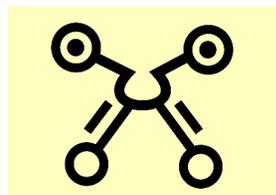
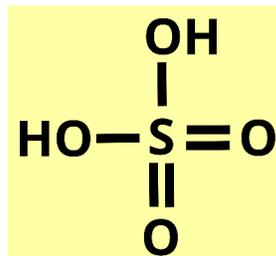
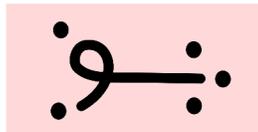
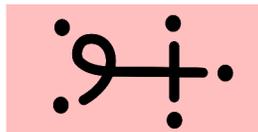
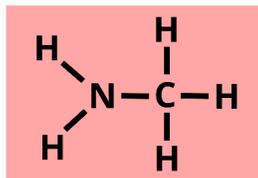
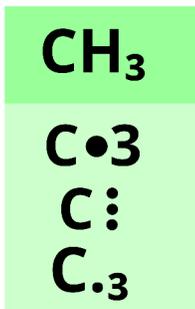
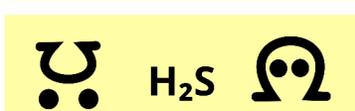
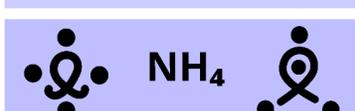
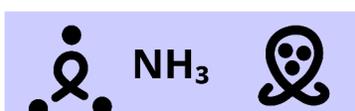
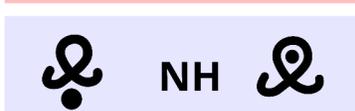
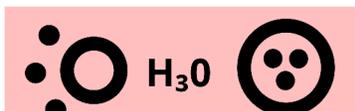
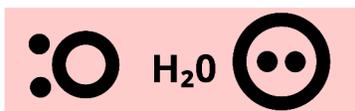
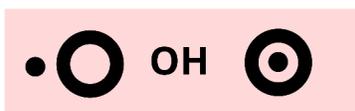


Next, hydrogen 

# Just keep using H.....



OR.....



Each cosmetic is a standalone trick  
Only equip the gear you like  
If you don't like one, just dont use it

Wanna see a cool stereochemistry trick?

# EZ Handedness

Chiral centers almost always have hydrogen  
Like 80%-90% of the time



When you look at carbon from this angle  
The fourth bond can only be above or below

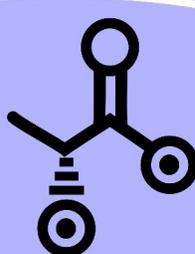
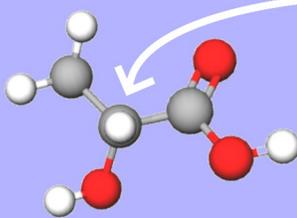
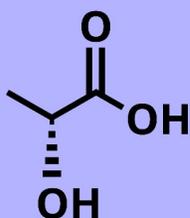
H



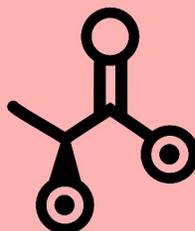
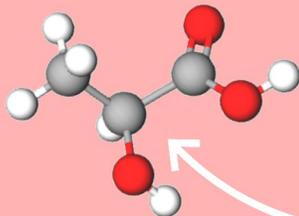
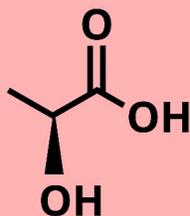
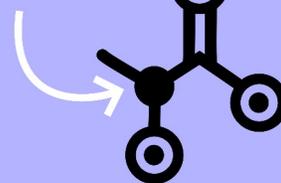
On top = Above



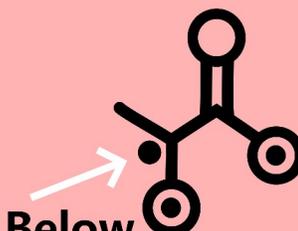
In corner = Below



H above



H Below

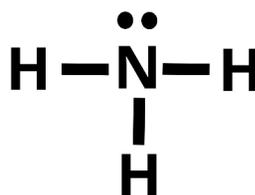


Then what about Electrons?  
That's next, keep going....

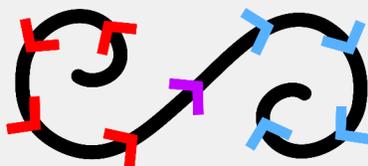


# Spirals ..for the "Spinner"

Spin is the iconic fundamental property in electron bonding



Counter  
Clockwise



Clockwise

Electrons pair up only if they have opposite spin

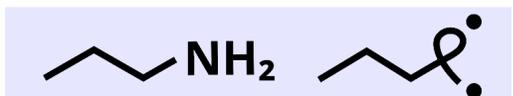
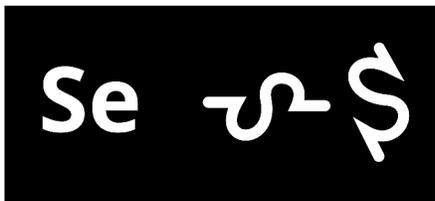
First they thought it was a ball physically spinning  
But they realized that's wrong!  
It's a quantum property.

Funny thing...

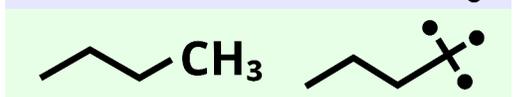
It has the same formula as physical spin

More PHun 

# Escape and Abandonment



Basic



Neutral



Acidic



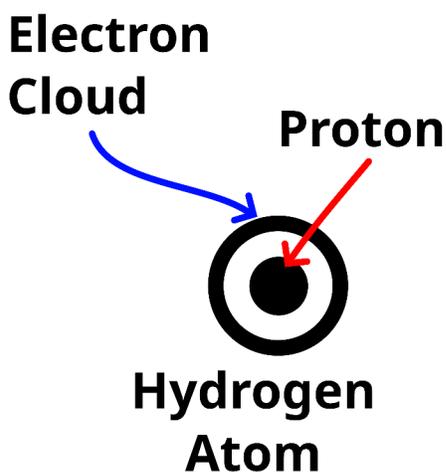
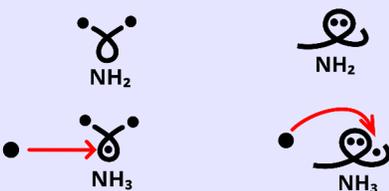
↓



More Acidic

## Bases accept protons

Nitrogen has a 'space'  
It can 'host a guest'



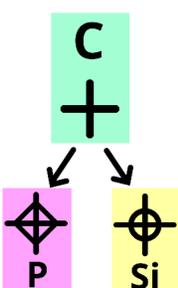
## Acids give up protons



Let's get brazen



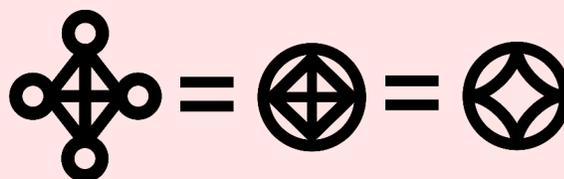
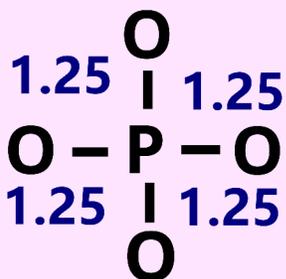
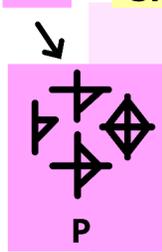
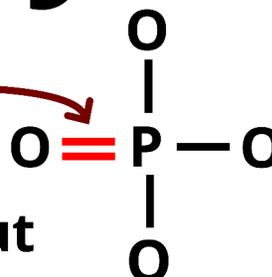
# Phos Ate by Ox



Lies!!!

Not a double bond

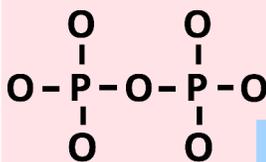
resonant, spread out



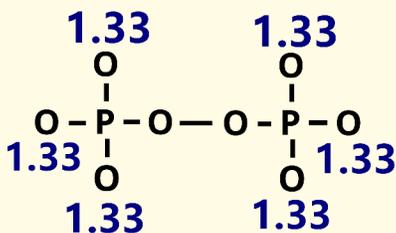
4 oxygen wrapper

Sooooooooo common  
so we give it a shorthand

Just give up  
Stop trying to note it  
We know it's sum 5



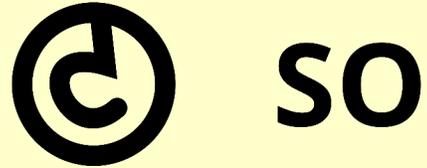
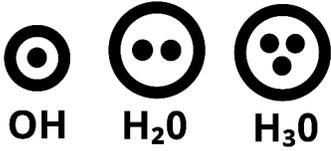
Assume single oxygen bridge  
Most common



Double O bridge  
needs to be marked

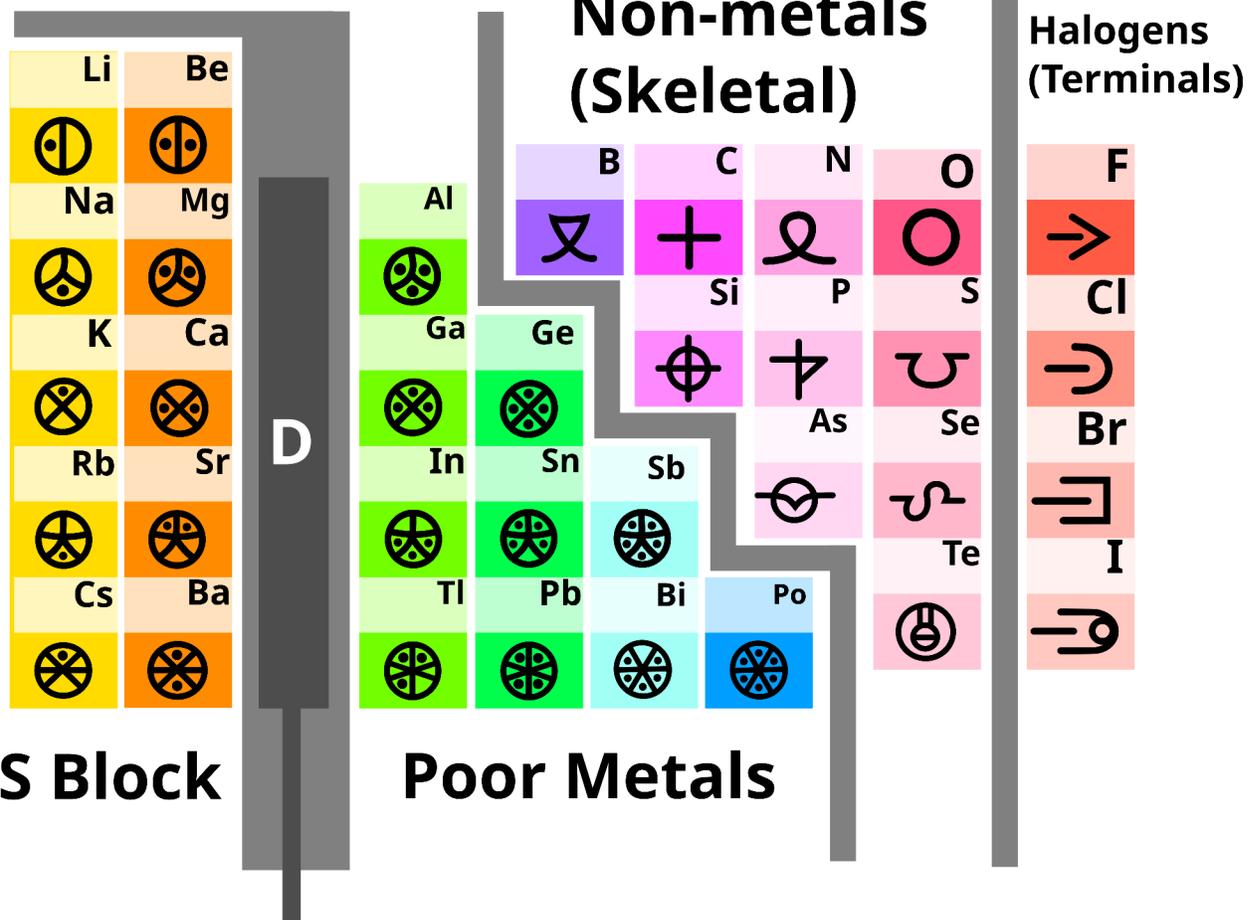
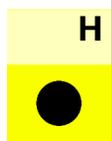
Time to steal Dalton's style

# Full Non-Metal Jackets



Even more  
Daltony 

# Dalton Reborn



## D Block under construction

Used these before  
But not happy with them  
Still hunting for elegance



Terminals near the end

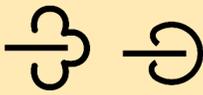
# Terminators

**F** →   →  

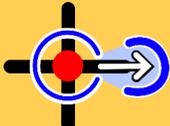
Barbed wire  
Electric fence    LiF    BeF<sub>2</sub>    CH<sub>2</sub>F    CF<sub>3</sub>

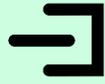
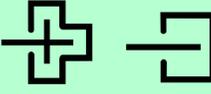
Like Electro-Static Spiked armour  
Repels anything trying to get near

Back off!!  
Don't touch me!!

**Cl** →    →  

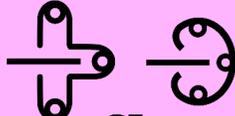
Extrovert  
Partner    NaCl    CaCl<sub>2</sub>    CH<sub>2</sub>Cl    CCl<sub>3</sub>

Electron Cloud   Chlorine pulls out and exposes some of carbon's electron cloud

**Br** →    →  

Convenient Cap    KBr    CaBr<sub>2</sub>    CH<sub>2</sub>Br    CBr<sub>3</sub>

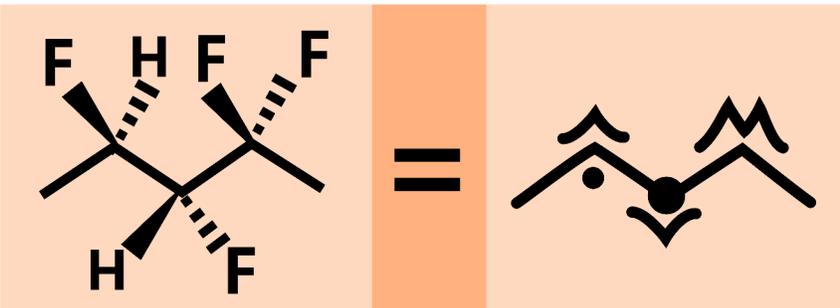
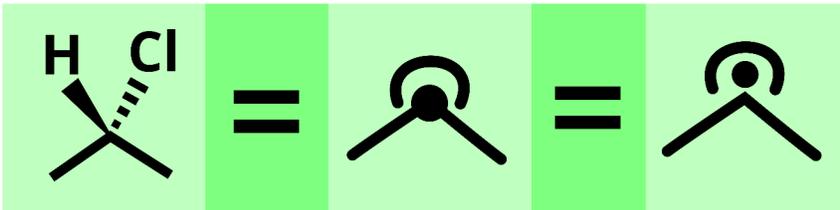
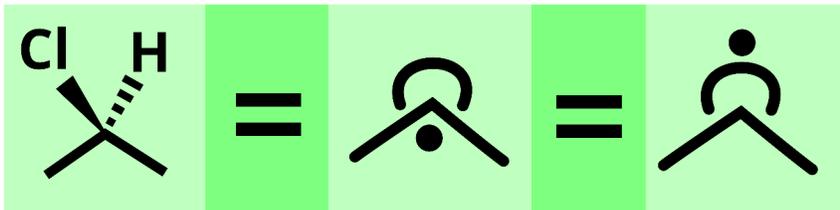
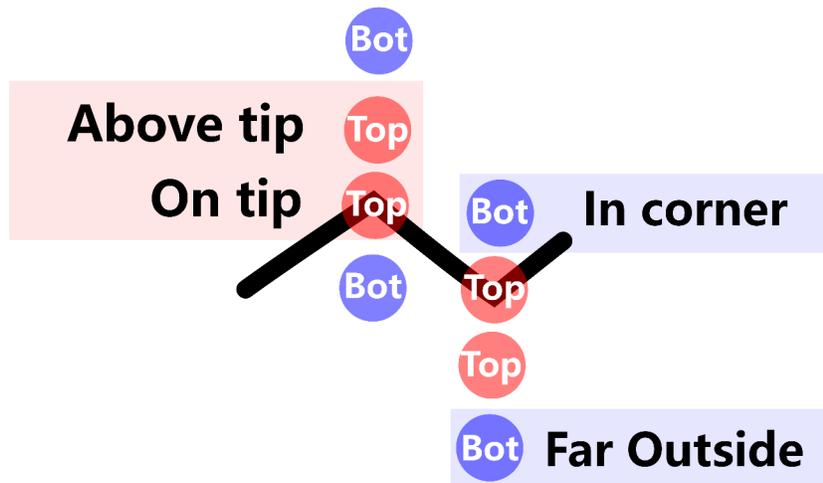
Like a twist off bottle-cap  
easy to put on and take off

**I** →    →  

Hollow Tip    KI    AlI<sub>3</sub>    CH<sub>2</sub>I    CI<sub>3</sub>

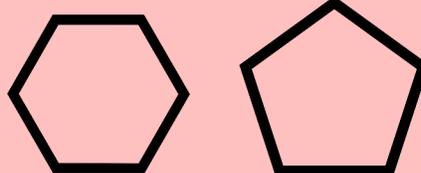
Iodine presents a 'hole' in the cloud  
Like an open door in the electron wall

Fork Terminals →



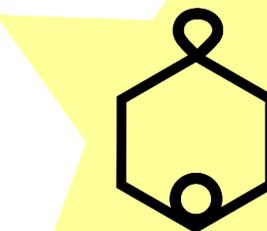
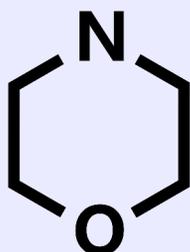
Still Hungry →

**OOPS!!**

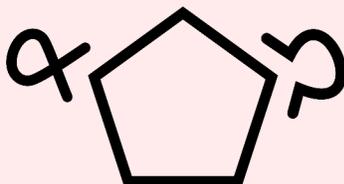


**I forgot to leave a gap**

**No Problem!**

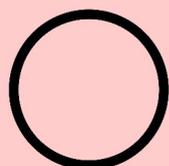
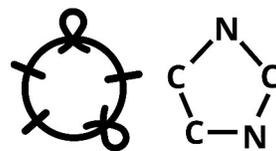


Oxygen doesn't need to be on the outside



**Take this even further** 

# Lazy Rings



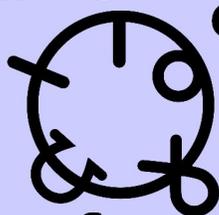
1. Draw A ring



2. Add to it

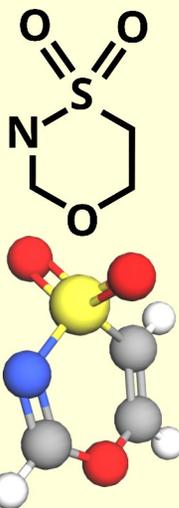
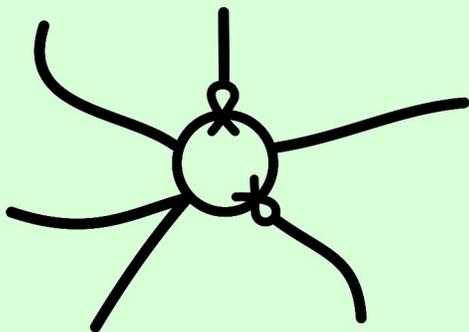
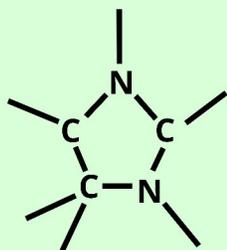
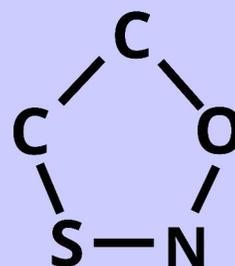
Intersection = C

Circle inside = O

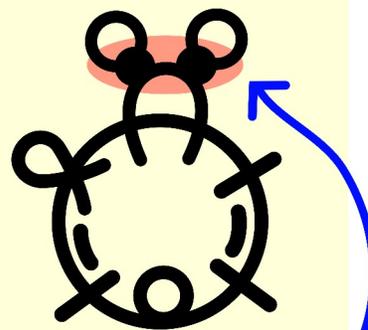


Horse shoe = S

Loop = N



Sulphur can also be a U shape

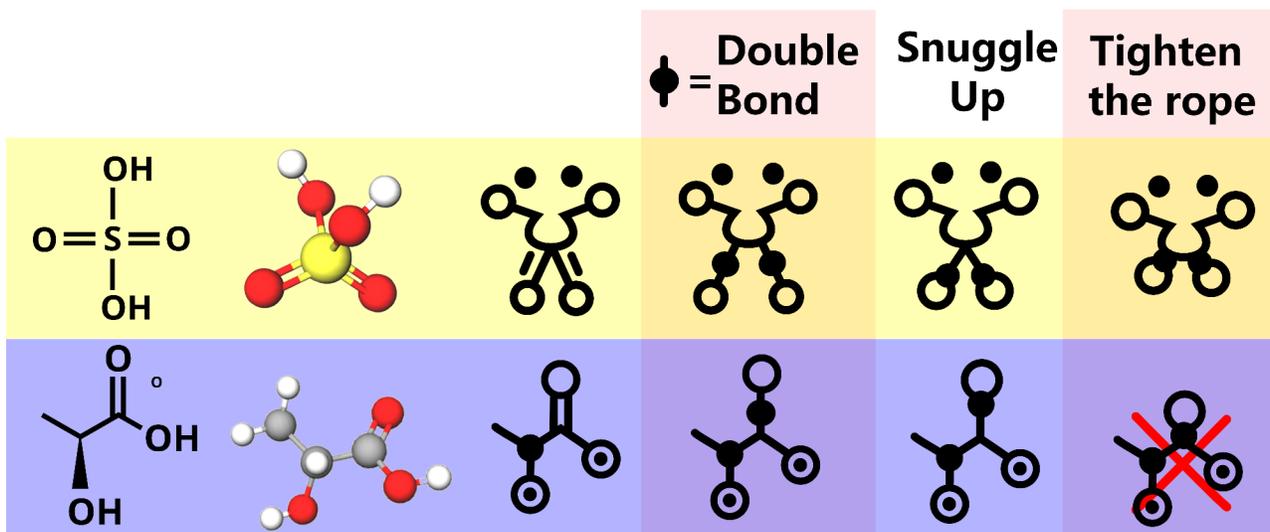


Wait..

Whats that? →

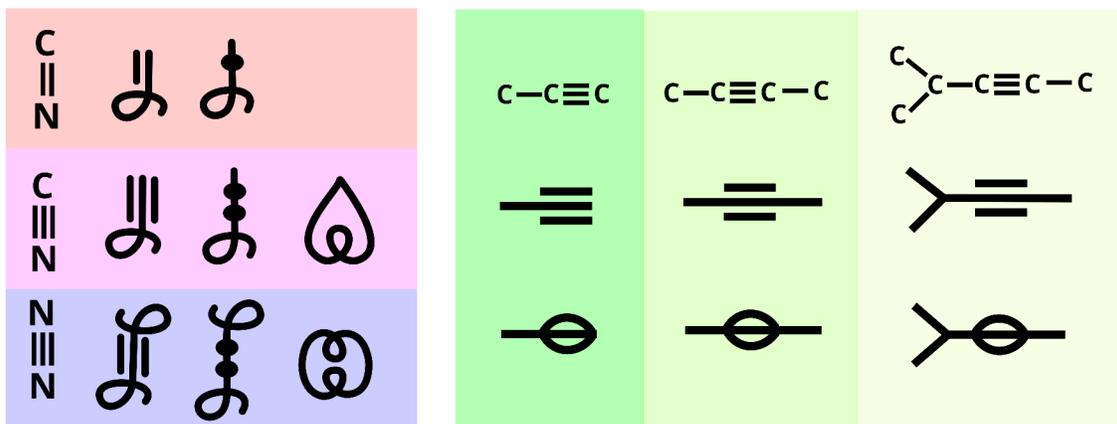
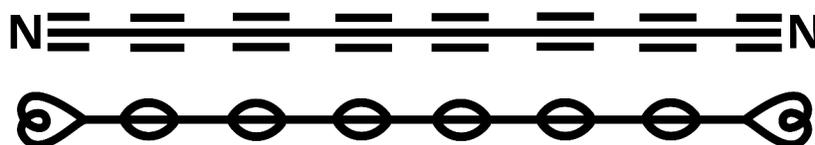
# The Two-Timing Virtual Hydrogen

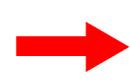
A dot on a bond line inceases bond strength



## Triple Bond

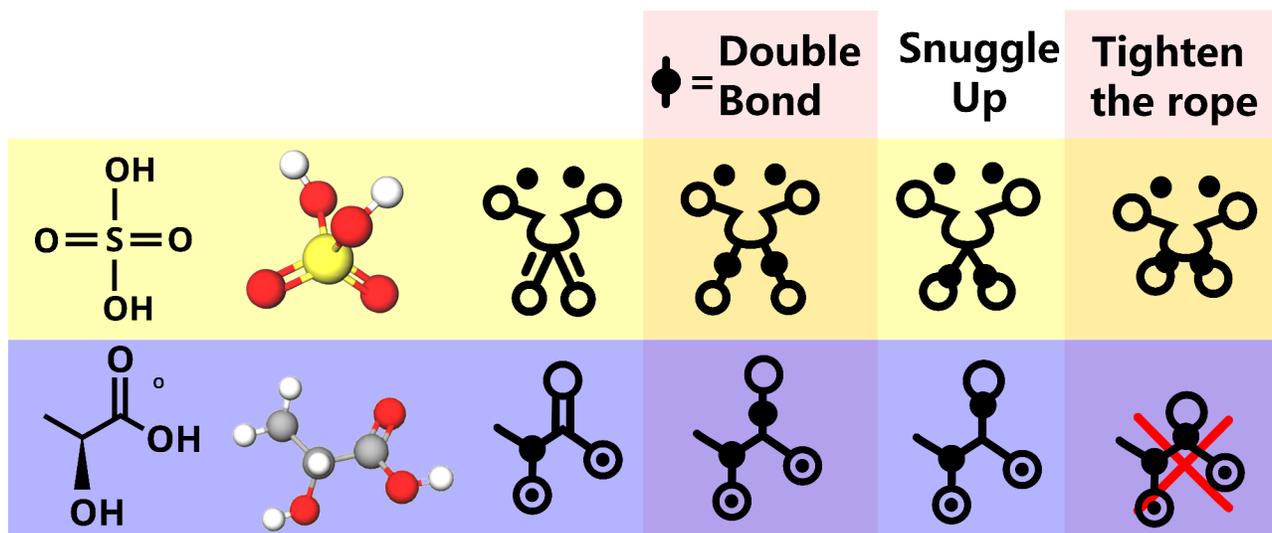
Best not to tighten rope with Carbon  
Conflicts with chiral marker



It's never enough, Is it? 

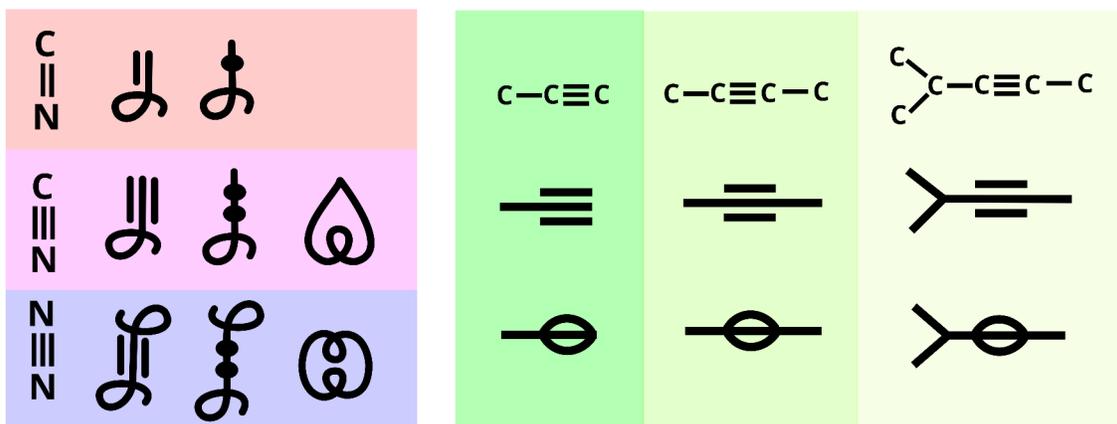
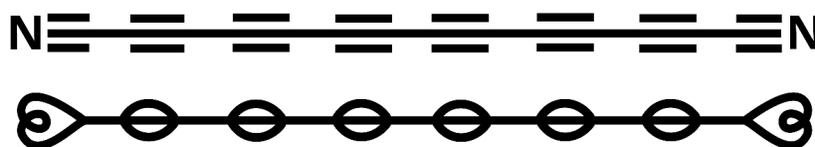
# The Two-Timing Virtual Hydrogen

A dot on a bond line inceases bond strength



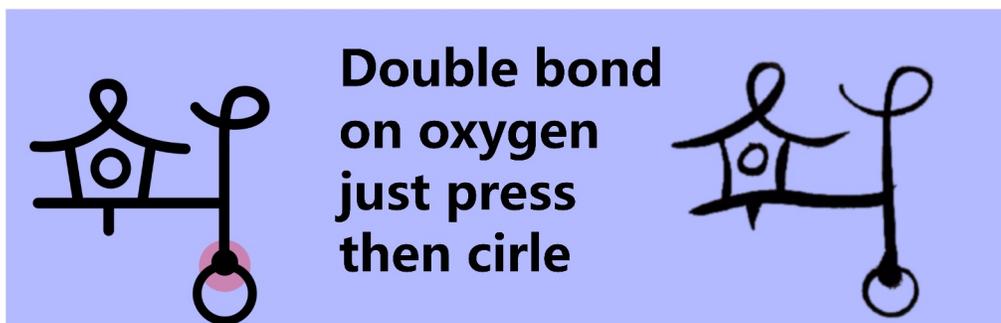
Best not to tighten rope with Carbon  
Conflicts with chiral marker

## Triple Bond



It's never enough, Is it? 

Designed with a calligraphy brush  
Some stuff is best suited for a soft brush



Thickness for 3D  
so much easier with a brush

Take what you like  
Leave what you dont

[www.dscript.org](http://www.dscript.org)  
[github.com/vastencn/Dchem](https://github.com/vastencn/Dchem)

There is a whole other layer for hyper flexibility  
and pictographic chemistry. But I've only made  
Chinese and Japanese videos so far.

English coming soon.

化学书法 on XHS

[www.dscript.org](http://www.dscript.org)